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43829

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EXAMINER

MARCELO, MELVIN C

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/035,360

Applicant(s)

MAJOR ET AL.

Examiner

Melvin Marcelo

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-21 is/are rejected.
- 7) ☒ Claim(s) 9 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 2-6-2006 have been fully considered but they are not persuasive.

Applicant's argument regarding the definition of a "network element" is not persuasive since the scope of the definition does not exclude the interrelated parts shown in Figure 19. See argument on page 8, lines 12-14, "As made clear from the specification, a network element that is the subject in the claims may be (but is not limited to) an IP (Internet Protocol) base transceiver station of a radio communication system (emphasis added)".

With respect to the arguments pertaining to "transport frames," packets are transported between the access routers over the LATA IP Transport Network. The terms "packet" and "frame" are used interchangeably in the art to represent data with an address header. If "packet" and "frame" are to be distinguished, applicant should provide a clear definition of each in order to differentiate their use of the term from the prior art.

With respect to "tagged frames," Baum teaches that net entities such as Customers 1030 in Figure 10 are tagged with logical port information since they are associated with an external port (column 8, lines 35-50), while Administration Entity 1090 is not associated with an external port and would not have been tagged with logical port information.

With respect to the objective in Baum, Baum teaches more than just a firewall function as stated in the Field of the Invention section the invention is directed to "methods, apparatus and data structures for aggregating traffic, which may originate from various media transport types, for presentation to a router, such as an access router of a network. Further, the traffic aggregation performed by the present invention may be done such that customers can be identified and such that customer device addressing information is available."

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 depends on claim 12 which further depends on claim 3. It is not clear what constitutes the first data source and second data source since claim 3, line 4, recites "a first net entity"; claim 12, line 1, recites "an additional data entity"; and claim 13, line 1, recites "a net entity." The examiner assumes that the first data source corresponds to the first net entity in claim 3 and the second data source corresponds to the additional data entity in claim 12.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-8 and 10-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Baum et al. (US 6,850,495 B1).

Baum teaches the frame encapsulator system (Figure 10), wherein the first elemental and second elemental devices are the access router connected by together by a network path (Figure 9, AR 812a connected to AR 812b). With respect to the claims below, references to the prior art appear in parenthesis.

Claims

1. In a network element (**Baum**, **Figure 19** constitutes a network element since it is a small part (i.e. an element) of the overall network shown in **Figure 9**) including a first elemental device (**Figure 19**, **Ingress Access Router 812**) and at least a second elemental device (**Egress Access Router 812**), the first and second elemental devices, respectively, connected together by way of a network path (**Ipcore 1940**) and upon which at least selectably to communicate a payload data stream and a management data stream upon a common transport stream (**Figures 8 and 9**, **LATA IP Network connects the Access Routers**, wherein **LATA** is **Local Access and Transport Area Network** that transports the packet shown in **Figure 37** including **Data 3510** which is payload data for user data or management data for control data), an improvement of apparatus for the first elemental device (**Figure 19**, **Ingress Access Router 812**), said apparatus comprising:

a frame encapsulator (**Encapsulate function 1930**) coupled to receive data to be communicated to the second elemental device, said frame encapsulator for frame-formatting the data into common-transport-stream-related frames (**Figure 37**, **packet 3700** is formatted for transport over **LATA** network, wherein the terms frame and packet are interchangeable since both refer to a unit of data with a header); and

a communicator coupled to said encapsulator (**Figure 19**, **communicator associated with Forward functions 1932 and 1934**) to receive the common-transport-stream related to frames, said communicator utilizing single device-specific **MAC (Medium Access Control)** addresses for addressing (**Figure 37**, **MAC addresses are single device-specific, column 14, lines 48-55**) and thereafter transporting the common-transport-stream-related frames upon the network path (**Figure 19**, **packets forwarded on Ipcore 1940**).

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2. In the network element of claim 1, a further improvement of apparatus for the second elemental device, said apparatus comprising:

a frame analyzer coupled to the network path (**Figure 19, functions associated with the Egress Access Router for forwarding the frame after receiving the packets from Ipcore 1940**) to receive the common-transport-stream related frames, said frame analyzer for recognizing the single device-specific MAC addresses and for selectably forwarding the common-transport-stream related frames responsive thereto.

3. In a network element (**Baum, Figure 19 constitutes a network element since it is a small part (i.e. an element) of the overall network shown in Figure 9**) having a first elemental device (**Figure 19, Ingress Access Router 812**) and at least a second elemental device (**Egress Access Router 812**), the first and at least second elemental devices, respectively, connected together by a connector (**Figure 9, Access Router 812a and 812b are connected by a bus**), an improvement of apparatus for facilitating communication of data, sourced at a first net entity (**Figure 10, Net entity is customer 1030**), at least from the first elemental device to the second elemental device, said apparatus comprising:

a frame encapsulator (**Encapsulate function 1930**) coupled to the first net entity to receive the data to be communicated to the second elemental device, said frame encapsulator for frame-formatting the data into data frames (**Figure 37, packet 3700 is formatted for transport over LATA network, wherein the terms frame and packet are interchangeable since both refer to a unit of data with a header**), the data frames having a header portion and a data portion, the header portion selectably including a prefix structure (**Figure 37, prefix structure is the header of the packet**), the prefix structure identifying the first net entity (**MAC source address 3750**), the data frame, once formed, for communication upon the connector to the second elemental device.

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4. *The apparatus of claim 3 wherein the connector which connects together the first and at least second elemental devices forms an standard compliant Ethernet point-to-point link (Figure 37, MAC Destination address 3740 and MAC Source address 3750 specifies a point-to-point link between two customer devices associated with the Ingress Access Router and Egress Access Router) and wherein the data frames into which said frame encapsulator encapsulates the data comprises Ethernet frames (Frame format in Figure 37 is Ethernet compliant based on Ether Type 3716).*

5. *The apparatus of claim 3 wherein the prefix structure included as part of the header portion selectably formed by said frame encapsulator comprises a VLAN (Virtual Local Area Network) Identifier (VID) (Header frame format in Figure 37 includes 802.1Q VLAN E TPID).*

6. *The apparatus of claim 5 wherein the prefix structure is of a length corresponding a VIE) field defined pursuant to an IEEE 802.1Q standard, and wherein the VID comprises an IEEE 802.1Q-defined VID (VLAN e TPID conforms to 802.1Q standard which defines the length).*

7. *The apparatus of claim 3 wherein the first elemental device (Figure 10, Access Router may include the Aggregation Unit 1010 which includes external ports connected to the Customer/net entity) comprises at least a first external port and wherein the first net entity is positioned external to the first elemental device and coupled to the first external port thereof, and wherein the prefix structure identifies the first external port to which the first data source is coupled (Header frame format in Figure 37 includes Logical Ingress Port).*

8. *The apparatus of claim 7 wherein the first elemental device comprises a packet-data interface converter (Figure 11, Aggregation Unit includes packet-data interfaces since the customer source may be one of various packet formats 1110, 1150, 1140), wherein the first net entity comprises a packet data source (xDSL over ATM 1110, native 1140 and gigabit*

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Ethernet 1150 may be considered packets since the data includes a header field with source and destination addresses), and wherein the prefix structure that identifies the first external port is a configuration parameter (Figure 10, Logical Ingress Port is a configuration parameter based on Port Configuration Process 1012 in Aggregation Unit 1010).

10. The apparatus of claim 3 wherein the data sourced at the data source is defined in terms of logical layers, the data formed of at least one lower-level logical layer and at least one higher-level logical layer and wherein the data formatted by said frame encapsulator comprises data formed of the at least one higher-level logical layer (Layers in Figures 7A-7C).

11. The apparatus of claim 3 wherein the first elemental device comprises an output port (Figure 19, output port associated with Forward Function 1934 of Ingress Access Router), the connector coupled to output port (Ipcore bus connecting the access routers in Figure 9), wherein the second elemental device comprises an input port (Input port associated with Forward Function 1952 of Egress Access Router), the connector coupled to the input port, and wherein the data frames, once formed by said frame encapsulator is provided to the output port of the first elemental device (Forward Function 1934 outputs packets to Ipcore 1940).

12. The apparatus of claim 3 wherein an additional data entity is positioned internal to the first elemental device and wherein the prefix structure of the header portion of the data frame formed by said frame encapsulator and comprising data generated by said additional data entity remains unpopulated such that the data frame forms a "not tagged" frame (It is inherent that the Access Router generates data frames such as management messages in order to communicate its status with Administration Entity 1092 in Figure 10, wherein such control messages would be "not tagged" since they do not originate from a logical ingress port, i.e. the data frame in Figure 37 would not have the Logical Ingress Port field



populated. Net entities such as Customers 1030 in Figure 10 are tagged with logical port information since they are associated with an external port (column 8, lines 35-50), while Administration Entity 1090 is not associated with an external port).

13. *The apparatus of claim 12 further comprising a net entity (Figure 10, Customer 1030 are the net entity, wherein the first elemental device is the Access Router/Aggregation Unit combination) wherein the first elemental device comprises at least a first external port (External ports 1040), wherein the net entity is positioned external to the first elemental device and coupled to the first external port thereof, and wherein the data frame formed by said frame encapsulator is selectably formed of data sourced by the first data source and of data sourced by the second data source (Figure 19, Encapsulate Function 1930 occurs serially such that data sources must be selected one at a time).*

14. *The apparatus of claim 12 wherein the data sourced at the data entity comprises management data (Figure 10, Administration Entity 1092 provides management data) and the data sourced at the net entity (Customer 1030 provides payload data) comprises payload data and wherein the tag header field is populated with the tag header when the data frame is formed of the data sourced by the net entity (Net entities such as Customers 1030 in Figure 10 are tagged with logical port information since they are associated with an external port (column 8, lines 35-50), while Administration Entity 1090 is not associated with an external port).*

15. *The apparatus of claim 3 further comprising: a detector (Figure 19, Forward function 1952 and DeEncapsulate function 1954 in the Egress Access Router receives packets from the Ingress Access Router, wherein deencapsulating detects the prefix structure of the header of the packet for those packets destined to customers at the Aggregation Device 1010) positioned at the second elemental device and coupled to receive*

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*indications of the data frame communicated from the first elemental device to the second elemental device, said detector for detecting whether the prefix structure is included as part of the header portion.*

16. *The apparatus of claim 15 wherein, when said detector fails to detect the prefix structure to form part of the header portion, the data frame is indicated merely to be received at the first elemental device (It is inherent that the Access Router generates data frames such as management messages in order to communicate its status with Administration Entity 1092 in Figure 10, wherein such control messages would be “not tagged” since they do not originate from a logical ingress port, i.e. the data frame in Figure 37 would not have the Logical Ingress Port field populated. Net entities such as Customers 1030 in Figure 10 are tagged with logical port information since they are associated with an external port (column 8, lines 35-50), while Administration Entity 1090 is not associated with an external port)).*

17. *The apparatus of claim 16 wherein the first elemental device (Figure 10, wherein the first elemental device is the Access Router/Aggregation Unit combination) comprises at least a first external port (External port 1040) and wherein the first data port (Customer 1030) is positioned external to the first elemental device and coupled to the first external port thereof, the prefix structure identifying the first external port, and wherein, when said detector detects the prefix structure, said detector further identifies the first data port to be associated with the data frame (Logical Ingress Port in the prefix structure of the header in the frame format shown in Figure 37).*

18. *In a method for communicating at a network element (Baum, Figure 19 constitutes a network element since it is a small part (i.e. an element) of the overall network shown in Figure 9) having a first elemental device (Figure 19, Ingress Access Router 812) and at least*

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*a second elemental device (**Egress Access Router 812**), the first and at least second elemental devices, respectively, connected together by a connector (**Figure 9, Access Router 812a and 812b are connected by a bus**), an improvement of a method for facilitating communication of data, at least from the first elemental device to the second elemental device, said method comprising:*

*encapsulating (**Encapsulate function 1930**) the data to be communicated into a data frame, the data frame having a header portion and a data portion (**Frame format in Figure 37**); and*

*selectably inserting a prefix structure into the header portion (**Frame format in Figure 37 includes prefix structure to the header portion such as 802.1Q VLAN E TPID**).*

*19. The method of claim 18 further comprising the operations of: communicating the data frame by way of the connector to the second elemental device (**Figure 9, Access Router 812a and 812b are connected by a bus**); and detecting, once the data frame is delivered to the second elemental device, whether the header portion includes the prefix structure (**Figure 19, Forward function 1952 and DeEncapsulate function 1954 in the Egress Access Router receives packets from the Ingress Access Router, wherein deencapsulating detects the prefix structure of the header of the packet for those packets destined to customers at the Aggregation.Device 1010**).*

*20. The method of claim 18 wherein the prefix structure selectably inserted into the header portion during said operation of selectably inserting comprises a VLAN (Virtual Local Area Network) Identifier (VID) (**802.1Q VLAN E TPID in the frame format in Figure 37**).*

*21. The method of claim 20 wherein the prefix structure corresponds to a VID field defined pursuant to an IEEE 802.1Q standard, and wherein the VID comprises an IEEE 802.1Q-defined VID (**802.1Q VLAN E TPID conforms to the standard**).*

***Allowable Subject Matter***

6. Claims 9 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Marcelo whose telephone number is 571-272-3125. The examiner can normally be reached on Mon-Fri 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Melvin Marcelo  
Primary Examiner  
Art Unit 2616

April 17, 2006